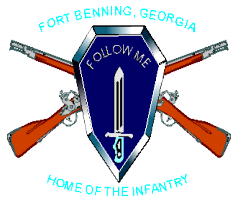


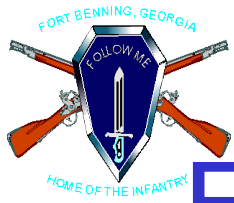
Heat Injury Risk Management

MAJ(P) Karen O'Brien



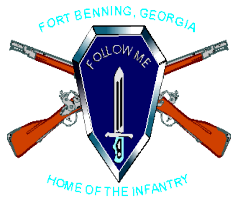
Outline

- Five steps of heat injury risk management
- Exertional heat injuries
- Water intoxication



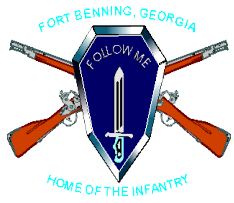
Five Steps of Heat Injury Risk Management

- Identify hazards
- Assess hazards
- Develop controls
- Implement controls
- Supervise and evaluate



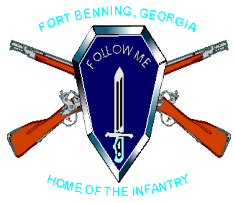
Heat Injury Hazards are Cumulative

- H- Heat category past 3 days
 - E- Exertion level past 3 days
 - A- Acclimation/ other individual risk factors
 - T- Temperature/rest overnight
-
- Cluster of heat injuries on prior days=
HIGH RISK



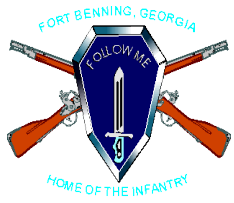
Individual Risk Factors

- Not acclimated
- Poor fitness (2 mi run > 16 min)
- Large body mass
- Minor illness
- Drugs (cold and allergy, blood pressure)
- Highly motivated



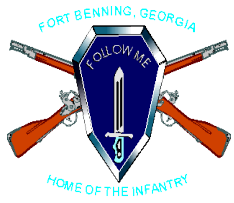
Individual risk factors

- Supplements- ephedra
- Recent alcohol use
- Prior heat injury
- Skin problems- rash, sunburn, poison ivy
- Age>40



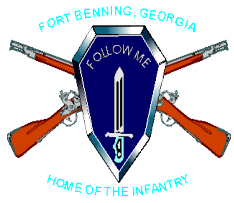
Impact of dehydration

- Degrades performance
 - 4% dehydration degrades performance 50%
- Increases core body temp
 - Every 1% increases core temp .1-.23 C



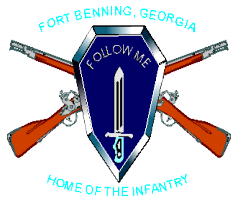
Assess Hazards

- Modify schedule- time of day, rest
- Clothing
- Schedule highest demand events later in training cycle
- Cumulative Effects- minimize consecutive days of heavy physical training, any heat injuries on previous day?



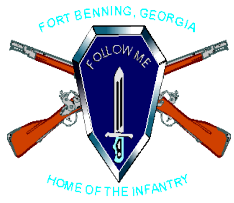
Develop Controls

- All unit leaders must be familiar with heat injury prevention and recognition
- Ensure acclimation occurs
- Mark Soldiers who are high risk
- Ensure water points accessible/ utilized



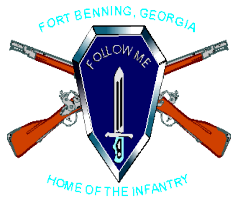
Develop controls

- Track Wet Bulb Globe Temp (WBGT)
- Track hydration of Soldiers
- Fluid replacement/ work/ rest guidelines



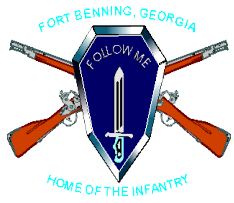
Implement controls

- Water- better absorbed if supplied in frequent, small amounts, 12 quart max/day
- Food- electrolytes, stimulates thirst
- Keep urine clear
- Work/rest cycles



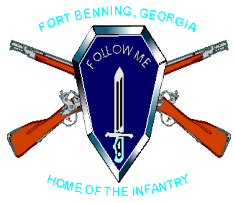
Implement controls

- Enforce policies
- Spot check junior leaders
- If 1-2 soldiers suffer heat injury-
stop training and assess situation



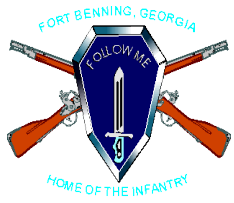
Symptoms of mild injury

- Dizziness
- Headache
- Nausea
- Unsteady walk
- Weakness
- Muscle cramps
- These folks need rest, water, evaluation
- These are your “canaries in the mine”



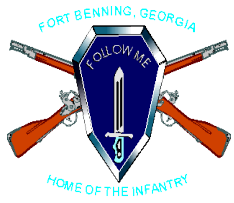
Emergent symptoms

- Confusion
- Unresponsiveness
- Hot body/ high temp > 104
- Involuntary bowel movement
- Convulsions
- Vomits more than once
- Refer to evacuation/ treatment algorithm



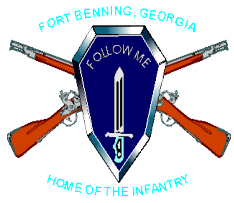
Evacuation criteria

- Vomits more than once
- No improvement after 1 hour of rest and hydration
- General deterioration
- Loss of consciousness/ mental status changes



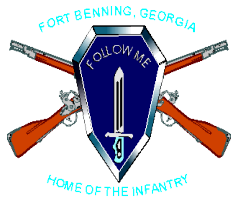
Pre-hospital care

- Cooling is first priority- can reduce mortality from 50% to 5%
- Drench with water
- Fan
- Iced sheets
- Massage large muscles while cooling
- Stop if shivering occurs



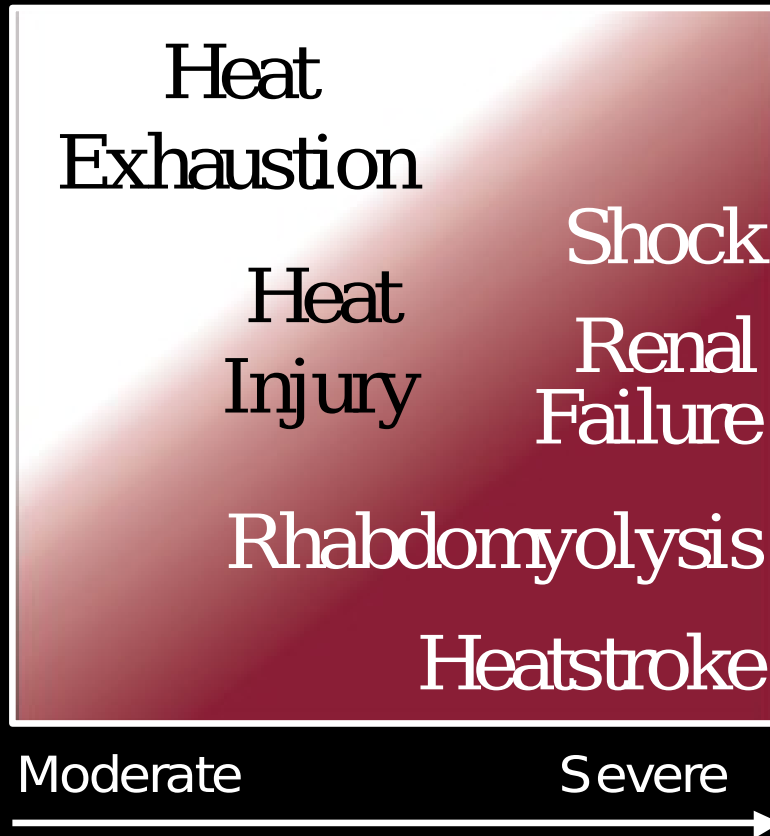
Pre-hospital care

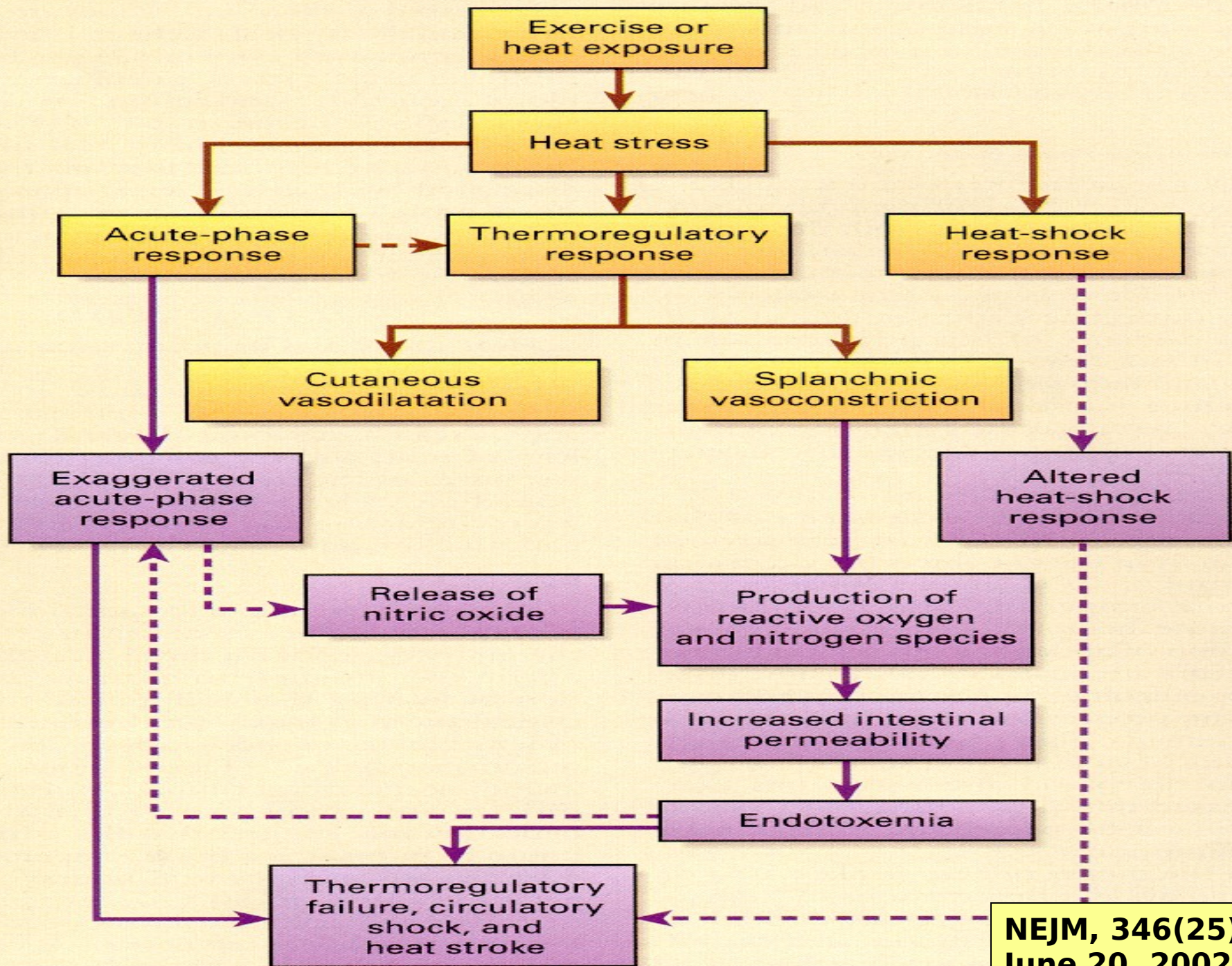
- Undress to briefs
- Oral fluids if alert and not vomiting
- IV while awaiting evacuation

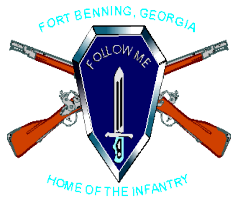


THE SPECTRUM OF EXERTIONAL HEAT ILLNESS

Hyperthermia
Dehydration
Nephropathy
Cell Lysis
Encephalopathy

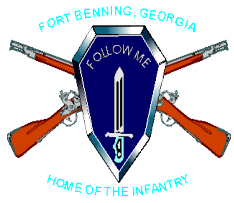






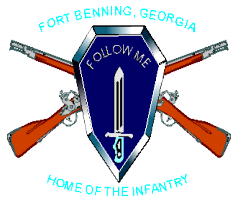
Heat Stroke

- Core temp > 104 F
- Mental status changes
- Liver damage
- Kidney damage
- Rhabdomyolysis
- Cardiac- arrhythmia, shock
- Blood clotting problems



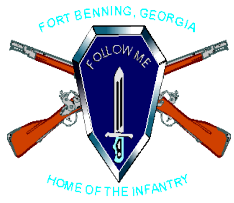
Water intoxication

- Usually occurs in TRADOC units
- Mental status changes
- Vomiting
- History of large volume of water consumed
- Poor food intake
- Abdomen distended/bloated
- Copious clear urine



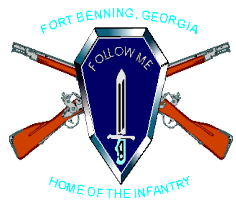
Summary

- Five steps of heat injury risk management
- Exertional heat injuries
- Water intoxication



Handout

- Heat injury prevention poster
- Risk management worksheet
- CHPPM website
- TRADOC Website
- Evacuation algorithm



Questions?



Drugs that Interfere with Thermoregulation

- Antihistamines (benadryl, atarax, ctm)
- Decongestants (sudafed)
- High Blood Pressure (diuretics, beta blockers)
- Psychiatric Drugs (tricyclic antidepressants, antipsychotics)